Dec. 22, 1936. E. HERTZKA 2,065,072

SPOOL

Filed Oct. 17, 1930

Fig. 1.

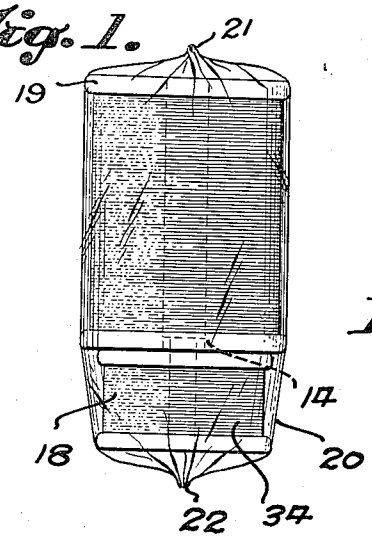


Fig. 2.

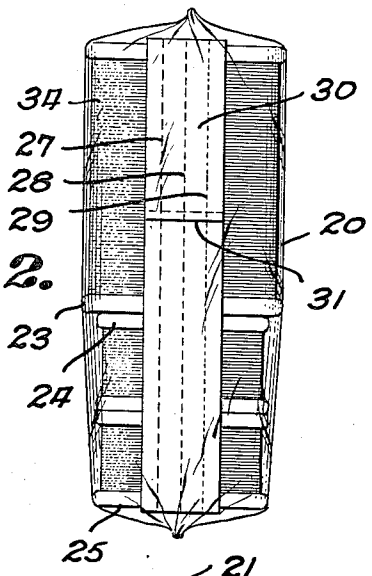


Fig. 3.

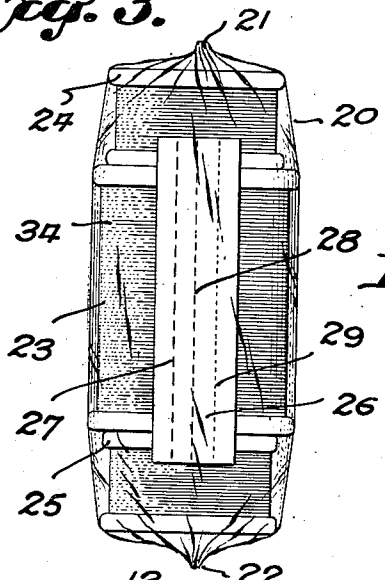


Fig. 4.

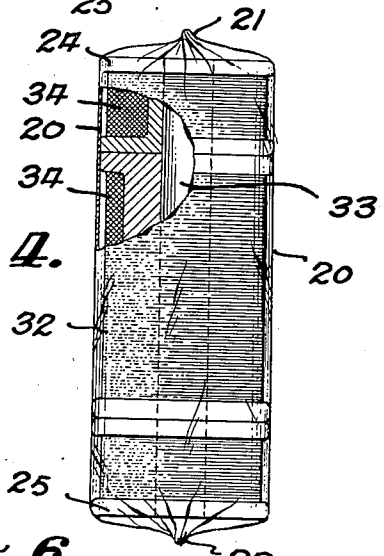


Fig. 5.

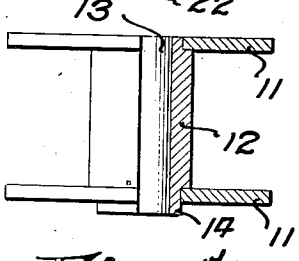
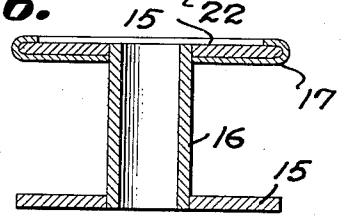


Fig. 6.



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SPOOL

Elsa Hertzka, New York, N. Y.

Application October 17, 1930, Serial No. 489,359

7 Claims. (Cl. 206—47)

My invention relates to spools and bobbins used in sewing machines, and more particularly it relates to an article of manufacture which comprises spools and bobbins wound with materials co-ordinatedly used by the operator of the sewing machine; the materials are combinedly furnished to the operator in a state ready for use in a sewing machine; the spools and bobbins containing, respectively, quantities of material corresponding to the co-ordinate requirement.

One of the objects of my invention is to furnish the operator of a sewing machine with the spool and bobbin required for a particular job, said spool and bobbin being made of suitable material and conveniently assembled so that the operator preferably uses a unit of my spools and bobbins instead of transferring part of the material contained on the spool onto a bobbin for the particular job he or she wants to do.

Another object of my invention is to supply the user with spools and bobbins wound with thread quantitatively and qualitatively adapted for co-ordinate use for facing and take-up stitches.

Another object of my invention is to furnish a sewing machine operator with spools and bobbins assembled in a manner which facilitates their combined handling and limits the combined unit to the smallest volume.

Another object of my invention is to assemble corresponding spools and bobbins so that the respective threads may be readily inspected.

A further object of my invention is protectively to assemble spools and bobbins which are used together in a sewing machine operation.

Another object of my invention is to provide in combination with a unit of spools and bobbins a sample indicating the appearance of the thread contained on the spools and bobbins, after it has been applied to the goods.

A further object of my invention is to shape spools and bobbins which are to be used together so that they may readily be assembled into a convenient parcel or so that they may conveniently be stored away together.

Another object of my invention is to provide in combination with bobbins and spools, which are used together, means which retain said spools and bobbins in alignment before use and while not in use.

One further object of my invention is to provide upon one end of a bobbin means which permit it readily to be assembled, end to end, with a spool used together therewith.

A further object of my invention is to provide for special types of sewing machines, such as hemstitching machines, in which several spools and several bobbins are used in one operation, units of co-ordinate spools and bobbins which may be used to replace each set of a spool and a bobbin on such a machine when they are unreeled. In connection with such machine, the operator will still more emphatically realize the advantages of my invention, by means of which a great economy of the time required for reloading the machine is attained at the comparatively low expense of replaceable spools and bobbins.

These and other objects of my invention will be more clearly understood from the following description and from the accompanying drawing, in which:

Fig. 1 shows, in a side view, a unit comprising one spool and one bobbin.

Fig. 2 shows a corresponding view of a unit comprising one spool and two bobbins.

Fig. 3 shows a similar unit differently assembled.

Fig. 4 shows the partly cross-sectioned side veiw of a unit of correspondingly shaped spools and bobbins.

Fig. 5 shows the partly cross-sectioned side elevation of a bobbin used in combination with my improvement.

Fig. 6 shows a fully cross-sectioned modified bobbin.

Similar numerals refer to similar parts throughout the several views.

In using a sewing machine, the operator ordinarily takes a spool of the yarn or thread to be used, and unreels therefrom, a certain amount of yarn or thread onto a standard bobbin by means of a spooling fixture which usually is incorporated in sewing machines. The bobbins used are parts of the equipment of the sewing machine, standard metal bobbins, which are specially adapted for the above mentioned spooling process on a sewing machine.

Following the method of my invention, I eliminate the spooling of the thread or ends onto the bobbin in combination with the sewing machine, and I supply the user, at the time he obtains a spool adapted for use on a sewing machine, with a bobbin which contains an amount of thread, which in combination with said spool furnishes a quantity of thread for the sewing machine shuttle corresponding to the yarn or thread contained on said spool and fed into the sewing machine over the needle bar from the top. The material used for making the bobbins and for the spools furnished therewith, is any readily avail-

able and readily shaped material such as wood, celluloid, paper, fiber, or any other suitable organic substance, materials which are durable enough to withstand the wear of a single use, after which they may be thrown away in the same manner, in which the spools used on a sewing machine are ordinarily disposed of after the yarn or thread has been unreeled therefrom. Co-ordinating the amount of thread, which is placed on the spool, with that contained on one or more bobbins, which are furnished therewith, in conformity with the quantities respectively required in a sewing machine operation, the method of my invention has the additional advantage of allowing the operator, by observation of the unreeling spool, to be constantly informed of the amount of thread which is contained on the concealed bobbin, the yarn on the bobbin and the yarn on the spool lasting for substantially the same period of operation.

The bobbin of my invention may be shaped out of one or the other of the above indicated organic materials or it may be assembled therefrom, as indicated in Fig. 5, where the bobbin flanges 11 are mounted upon the receded ends of the hollow core 12 of the bobbin. If the diameter of the bore 13 of the bobbin is smaller than that of the spool to be used in connection therewith, the receded end of the core 12 may protrude from the flange 11 which is mounted on said end, as shown at 14, the outer diameter of said receded end corresponding to the inside bore of the spool in connection with which my bobbin is to be used, so that the bobbin may be assembled into and with the spool, the shoulder 14 of the bobbin being inserted into the opening in the spool. If the spool has a hole of about the same diameter as the bobbin, it may be countersunk at one end to receive the shoulder 14 of the bobbin. The diameter of the shoulder 14 and of the opening at the end of the spool may be such that they stick together when assembled, end to end. The shoulder 14 represents also a means reducing the friction of the bobbin on a supporting face, upon which it rests in thrustwise abutment.

In Fig. 6 I show a modified bobbin which may be substantially made out of paper or other suitable material. The flanges 15 are suitably fastened upon the sleeve 16. One of said flanges is provided with a thin metal covering 17, which extends from the sleeve 16 over the rim of said flange in bead fashion. This covering serves to provide a smooth edge upon the circumference of the flange, over which the thread contained on the bobbin may readily slide when it is unreeled from said bobbin.

When the amount of thread to be taken from the bobbin during a sewing operation is substantially equal to the amount of thread to be taken during the same operation from a spool, the volume between the flanges of the bobbin, around the core thereof, is substantially equal to the space on the surface of a spool which is ordinarily occupied by the thread so that a spool and bobbin, which are used together, are provided with the same length of thread. A bobbin 18 and spool 19 of that kind are shown in Fig. 1, assembled end to end, and held together by a transparent wrapper 20. A sheet of the transparent wrapping material is extended substantially cylindrically over the spool and bobbin and is then folded or twisted in at the ends 21 and 22, so that the spool and bobbin are held together substantially in concentric alignment.

In Fig. 3 I show, similarly assembled, a spool 23 with two bobbins 24 and 25, which latter contain about the same amount of thread as the spool 23. Inside of the wrapper 20 I extend a piece of flexible material 26 provided with longitudinally arranged stitches 27, 28 and 29, which represent various types of stitches produced by threads similar to those contained on the spool 23 and the bobbins 24 and 25 during a sewing operation.

Whereas the two bobbins 24 and 25 are assembled with the spool 23 of Fig. 3 by being placed onto both ends thereof, I show the two bobbins 24 and 25 assembled underneath the lower end of the spool 23 in Fig. 2 and the three parts are assembled in that position either by the transparent covering 20, or by a sample 30 with stitches 27, 28 and 29, which forms an endless band closed at the same 31, and which longitudinally extends around the spool 23 and the bobbins 24 and 25 concentrically assembled therewith. The spool may also be assembled with the bobbins by a band 30 as well as by the transparent covering 20 as shown in Fig. 2.

To adapt the spool and bobbins forming the unit of my invention in a still more compact fashion, the outer diameters of the spool and of the bobbin or bobbins may be made substantially the same, such an arrangement being shown in Fig. 4, in which the bobbins 24 and 25 are concentrically arranged upon a spool 32 of substantially the same outside diameter. A covering 20 extends cylindrically over the assembled spool and bobbins and over the ends of the two bobbins. The spool and bobbins of Fig. 4 are shown to have substantially the same bore and an arbor 33 extends through the bobbins and spool, retaining the three parts in concentric alignment. The arbor 33 may be made of such diameter as frictionally to engage upon the three parts of the unit; for instance, it may be folded or rolled up from stiff paper, which tensionally bears upon the walls of the bores of the various parts. In such a case, the wrapper 20 may be omitted. The wrapper 20 offers, however, a convenient means for the protection of the thread 34 contained on the spools and bobbins. At the same time it allows materials to be seen, before the user opens the protective wrapper for the purpose of using the contents.

While I have shown and described my invention with some degree of particularity, it will be realized that other modifications and changes may be resorted to under special conditions. I therefore do not wish to be limited and restricted to the exact details shown and described, but reserve the right to make such changes and modifications as may fairly fall within the scope of the subject matter now being claimed.

What I claim is:—

1. An assembled spool and bobbin provided with equivalent amounts of thread adapted for co-ordinate use on a sewing machine, comprising a bobbin to be concealed on a sewing machine, a visible spool, said bobbin and spool being adapted to unwind their respective threads simultaneously.

2. As an article of manufacture, an assembled spool and bobbin, said spool containing thread for the facing and take-up stitches for a sewing operation, said spool containing an equivalent amount of thread to the bobbin and coordinating to constantly inform the operator of the amount of thread on a normally concealed bobbin.

3. As an article of manufacture, a spool, and a bobbin assembled with said spool and containing co-ordinated quantities of thread for the

facing and take-up stitches of a sewing operation, respectively.

4. As an article of manufacture, a spool, a bobbin assembled end to end with said spool and containing thread for the facing and take-up stitches of a sewing operation, respectively, and a shoulder concentrically extending from the end of said bobbin into an opening on said spool.

5. As an article of manufacture, a spool, and a bobbin assembled end to end with said spool and containing thread for the facing and take-up stitches of a sewing operation, respectively, said spool and said bobbin being of substantially the same outside diameter but of different lengths.

6. As an article of manufacture, a bobbin adapted to be mounted in a sewing machine and containing thread for take-up stitches, a spool containing thread for facing stitches corresponding to said take-up stitches, and means coaxially assembling said bobbin and said spool.

7. As an article of manufacture, a bobbin and a spool containing corresponding quantities of thread for take-up and facing stitches and shaped to be mounted in a sewing machine for the respective stitching operation, and means coaxially assembling and covering said bobbin and spool in order to facilitate their handling before actual use.

ELSA HERTZKA.